UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,291	03/28/2001	Kiyoshi Ozaki	1508.65377	6868

7590 08/08/2006

Patrick G. Burns, Esq.
GREER, BURNS & CRAIN, LTD.
300 South Wacker Dr., Suite 2500
Chicago, IL 60606

EXAMINER	
NGUYEN, HOAN C	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,291	03/28/2001	Kiyoshi Ozaki	1508.65377	6868

7590 04/17/2006

Patrick G. Burns, Esq.
GREER, BURNS & CRAIN, LTD.
300 South Wacker Dr., Suite 2500
Chicago, IL 60606

EXAMINER	
NGUYEN, HOAN C	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/819,291	OZAKI ET AL.	
	Examiner	Art Unit	
	HOAN C. NGUYEN	2871	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 39-42* is/are pending in the application.

4a) Of the above claim(s) *1-5 and 39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *40-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/21/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant canceled claims 6-38.

Election/Restrictions

Applicant's election with traverse of Species C (claims 40-42) in Paper on 2/15/2006 is acknowledged.

Applicant's arguments regarding the restriction requirement have been considered; however, the traversal was on the grounds that there is no serious burden on the Examiner in examining all of claims 1-5 and 39-42 together. This is not found persuasive since a nonelected species A draws to a fault repairing method with two conducting films that are connected the disconnected wirings to pixel electrode; a nonelected species B draws to a fault repairing method with one conducting film on inner walls and surfaces of the first and second repairing contact holes that reach a surface of the transparent glass substrate; and a elected species C draws to a fault repairing method with first and second contact holes formed after forming the pixel electrode, then the fourth conductive film formed to fill the disconnected repairing contact holes.

Therefore, the requirement is deemed proper and is considered to be final.

Claims 1-5 and 39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions and species, there being no

allowable generic or linking claim. Therefore, ONLY claims 40-42 are pending in the elected Species.

Response to Amendment

Applicant's arguments with respect to new claims 40-42 based on the Response filed on 11/21/2005 have been considered but are moot in view of the new ground(s) of rejection. Therefore, this is Final action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 42 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 42 recites the feature of "the first and second disconnection repairing contact holes are connected to each other through the pixel electrode by the fourth conductive film" that is not disclosed in the original specification. In the specification, Fig.16-17 shows the first and second disconnection repairing contact holes 203/205 are connected to each other through the pixel electrode by two (not one) conducting films

209 and 211. Fig. 21 shows the first and second disconnection repairing contact holes 273/275 are connected to each other through the pixel electrode by two (not one) conducting films 277 and 279. Fig. 25 shows the first and second disconnection repairing contact holes 323/329 are connected to each other through the pixel electrode by three (not one) conducting films 327, 329 and 331.

Therefore, the feature in claim 42 considers as new subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikawa et al. (US5995178A) in view of Nakayoshi et al. (US6310667B1) and Song et al. (US5532853A) and Imura et al. (US6239856).

Fujikawa et al. teach (Figs. 1-5) a fault repairing method for a liquid crystal display device that includes a thin film transistor 13 having a gate electrode and a gate bus line 15, which are made of a first conductive film, being formed on a transparent glass substrate, a gate insulating film 22 covering the gate electrode and the gate bus line; and a source electrode, a drain electrode and a drain bus line 17, which are made of a second conductive film, being formed on the gate insulating film 45, an insulating film covering over the thin film transistor; and a pixel electrode 12 formed of a

transparent electrode, which is made of a third conductive film, being formed on the insulating film and inherently connected to the source electrode through a contact hole formed in the insulating film (since the pixel electrode separates the source electrode with an insulating film 45, it must connect the pixel electrode to the source electrode via the contact hole as shown in another example Fig. 6), the method comprising the steps of:

- performing to find a disconnected wiring (it must inherence since repairing could not proceed without step of finding a disconnected wiring;
- after forming the pixel electrode 12, forming a first disconnection repairing contact hole (at marks X as Fig. 1shown, 29b as Figs. 4-5 shown)and a second disconnection repairing contact hole.
- forming a fourth conductive film 41/43 to fill the disconnection

wherein

Claim 41:

- the first and second disconnection repairing contact holes are directly connected to each other by the fourth conductive film.

Claim 42:

- the first and second disconnection repairing contact holes are connected to each other through the pixel electrode 12 by the fourth conductive film.

However, Fujikawa et al. fail to disclose the method comprising the steps of (a) conducting a disconnection inspection to find a disconnected wiring; (b) forming contact

However, Fujikawa et al. fail to disclose the method comprising the steps of (a) conducting a disconnection inspection to find a disconnected wiring; (b) forming contact holes so as to reach a surface of the transparent glass substrate and expose the disconnected drain bus line within the disconnection repairing contact hole; (c) forming a fourth conductive film by a laser CVD method.

Nakayoshi et al. teach the method comprising the step of conducting (with inspection probe) a disconnection inspection to find a disconnected wiring for suppressing error in the disconnecting inspection of wiring lines (abstract).

Song et al. teach (Fig. 5A-C) forming the method comprising the step of contact holes so as to reach a surface of the transparent glass substrate 101 and expose the disconnected drain bus line within the disconnection repairing contact hole for melting all the insulating films and wirings (signal lines 103), thus mutually coupling within the contact holes between conducting layer 201 and wirings 103 (col. 4 lines 34-46).

Imura et al. teach (col. 7 lines 8-13) the conductive film formed by a laser CVD method for precipitating a metal thin film by irradiating metal with laser light as taught by Imura et al. (col. 7 lines 8-10).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a fault repairing method for a liquid crystal display device as Fujikawa et al. disclosed with the steps of (a) conducting a disconnection inspection to find a disconnected wiring for suppressing error in the disconnecting inspection of wiring lines as taught by Nakayoshi et al. (abstract); (b)

forming contact holes so as to reach a surface of the transparent glass substrate and expose the disconnected drain bus line within the disconnection repairing contact hole for melting all the insulating films and wirings (signal lines 103), thus mutually coupling within the contact holes between conducting layer 201 and wirings 103 as taught by Song et al. (col. 4 lines 34-46); (c) forming a fourth conductive film by a laser CVD method for precipitating a metal thin film by irradiating metal with laser light as taught by Imura et al. (col. 7 lines 8-10).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571)

272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H. Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN
Examiner
Art Unit 2871

chn

ANDREW SCHECHTER
PRIMARY EXAMINER